


PATENT COOPERATION TREATY
PCT
INTERNATIONAL PRELIMINARY EXAMINATION REPORT
(PCT Article 36 and Rule 70)

17 JUN 2005

Applicant's or agent's file reference P02066	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/NO 03/00425	International filing date (<i>day/month/year</i>) 17.12.2003	Priority date (<i>day/month/year</i>) 23.12.2002
International Patent Classification (IPC) or both national classification and IPC F25B9/00		
Applicant SINVENT AS ET AL.		
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of sheets.</p>		
<p>3. This report contains indications relating to the following items:</p> <ul style="list-style-type: none">I <input checked="" type="checkbox"/> Basis of the opinionII <input type="checkbox"/> PriorityIII <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicabilityIV <input type="checkbox"/> Lack of unity of inventionV <input checked="" type="checkbox"/> Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statementVI <input type="checkbox"/> Certain documents citedVII <input type="checkbox"/> Certain defects in the international applicationVIII <input type="checkbox"/> Certain observations on the international application		
Date of submission of the demand 18.06.2004	Date of completion of this report 03.02.2005	
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer McLaughlin, D Telephone No. +49 89 2399-2762	



ATTACHMENT "F"

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/NO 03/00425**

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-5 as published

Claims, Numbers

1-8 as published

Drawings, Sheets

1/2-2/2 as published

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

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5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	4-7
	No: Claims	1-3, 8
Inventive step (IS)	Yes: Claims	
	No: Claims	4-7
Industrial applicability (IA)	Yes: Claims	1-8
	No: Claims	

2. Citations and explanations

see separate sheet

Section V

- 1) a) All the essential features of claims 1 and 3 to 8 are expressed in facultative terms, e.g. in claim 1 it is claimed that a parameter reflecting the COP "can be used" or in claim 3 that a regulation system "may vary the pressure". This means that such expressions can be ignored in the analysis of the claim. However, in order to render a meaningful examination possible, it will be assumed in the following that said facultative expressions have been replaced by definitive ones; e.g. "can be used" in claim 1 by "is used".

b) Claims 1 and 4 to 8 are directed to a refrigeration system but the essential features thereof have been expressed in terms of a method step; e.g. the characterising feature in claim 1 that an on-line estimation of the COP is used as a signal for optimum regulation is not a feature of said system but rather how it is operated. The above claims are therefore unclear making an examination difficult. In the following, it will be assumed that the method steps are carried out by the "regulation system" claimed in claim 3.
- 2) Document EP-A-1 202 004 (document D1) is regarded as being the closest prior art and discloses the following features thereof (see especially column 7, line 40 to column 9, line 18 and figures): a compression refrigeration system including at least a compressor (1), a heat rejector (2), an expansion means (3) and a heat absorber (4) connected in a closed circulation circuit that may operate with supercritical high-side pressure, whereby an on-line estimation of coefficient of performance (COP), or a parameter reflecting the COP, is used as a signal for optimum regulation and operation of the compression refrigeration system.

Hence, document D1 reveals all the features of claim 1 and claim 1 is not new (Article 33(2) PCT).
- 3) Document D1 also reveals all the features of claims 2, 3 and 8 so that these claims are also not new (Article 33(2) PCT).
- 4) Dependent claims 4 to 7 contain minor changes which are well-known to the skilled man. These claims, therefore cannot be considered to be inventive when combined with any claim to which they refer (Article 33(3) PCT).
- 5) The essence of the invention appears to lie in the feature that, when operating

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conditions change, a perturbation of the high side pressure is performed and a correlation between the pressure and energy efficiency is established, whereby the optimum pressure is determined and used until the operating conditions change again (see description, page 3, paragraph 3). This feature is not known from the documents cited in the search report. Hence, these features should have been included in claim 1, whereby it should have been clarified that these steps are carried out by the regulation system.

- 6) The industrial applicability of the invention is obvious.